Astragalus sinuatus Piper

Whited's milk-vetch

Fabaceae (Pea Family)

Status: State Endangered, USFWS Species of Concern
Rank: G1S1

General Description: Tap-rooted perennial with several spreading stems up to 18 inches long; leaflets 11-15; foliage is olive green. Flowers ascending (not nodding), white to pale cream, some racemes having more than 10 flowers; wing petals shorter than the banner, which is greater than 5/8 inch; pods pubescent and sickle-shaped, not coiled; calyx 3/8 to 1/2 inch, the teeth greater than or equal to 1/4 the length of the tube.

Identification Tips: *A. sinuatus* occurs with at least three other *Astragalus* species. *A. spaldingii* and *A. purshii* are much smaller in size, both reaching 2 to 4 inches in height, and having a more prostrate growth habit. *A. leibergii* can be distinguished by its whitish cream flowers, erect growth habit including the flowering stem, and a distinct preference for more mesic habitats.

Phenology: Leaf emergence is initiated in late March or early April and foliage is fully "leafed-out" by mid-April. Floral buds are usually broken by mid-April and peak anthesis occurs in late April and early May. Fruits are beginning to develop by mid-May and are present through late July.

Range: Local endemic; known only from an area of less than 10 square miles within southern Chelan County, WA in the Eastern Cascades physiographic province.

Habitat: Rocky hillsides associated with the big sagebrush / bluebunch wheatgrass association of Daubenmire (1970). Soils consist of wind deposited silts mixed with small amounts of volcanic ash over basalt bedrock. Elevation: 800 to 2000 feet. Associated species include sulfur lupine (*Lupinus sulphureus*), desert yellowdaisy (*Erigeron linearis*), longleaf phlox (*Phlox longifolia*), woodsia (*Woodsia oregana*), balsamroot (*Balsamorhiza sagittata*), fernleaf desertparsley (*Lomatium dissectum*), bulbiferous fringecup (*Lithophragma bulbifera*), and woolly-pod milkvetch (*Astragalus purshii*).

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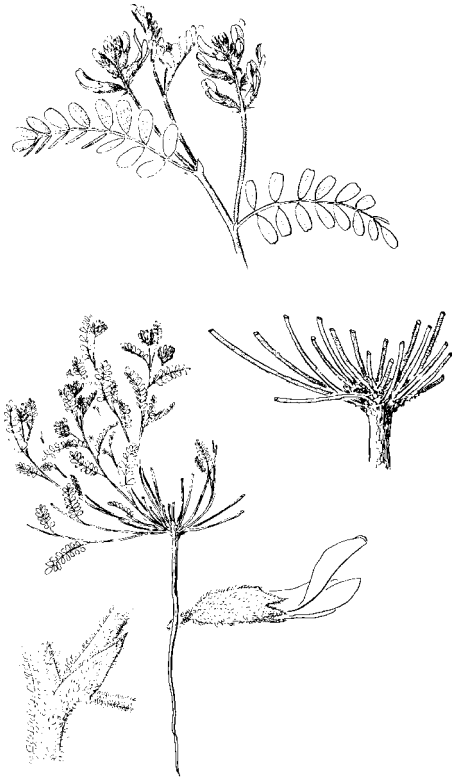
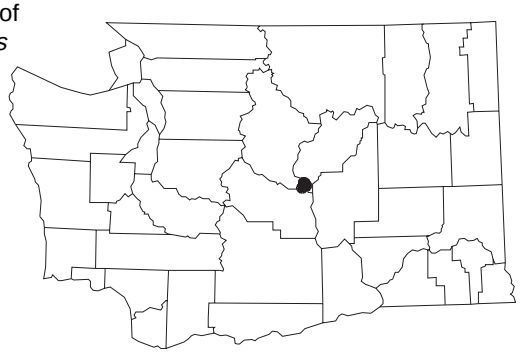


Known distribution of *Astragalus sinuatus* in Washington



● Current (1980+)
○ Historic (older than 1980)

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John Gamon

Birdie Davenport

Janice Friebaum

1997 Produced as part of a cooperative project between the Washington Department of Natural Resources, Washington Natural Heritage Program, and the U.S.D.I. Bureau of Land Management.
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Ecology: The factors limiting the distribution of *A. sinuatus* are unknown. Like many other rare members of the genus, it takes advantage of disturbed ground, such as dirt roads, yet it does not seem to successfully expand its range. Periodic fire (within a 30 to 90 year frequency interval) probably played a role historically in maintaining habitat for this species. However, fire today might promote weedy annuals at the expense of *A. sinuatus*.

State Status Comments: The species has an extremely small range and much of the habitat within its historic range has been converted or significantly degraded by agriculture, grazing and gravel pits. Individuals appear to reproduce successfully, yet seemingly suitable habitat remains unoccupied.

Inventory Needs: Additional inventory is needed in minor tributaries and south-facing slopes of eastward trending ravines along the east slope of Jumpoff Ridge in southeastern Chelan County.

Threats and Management Concerns: Fire suppression and grazing may lead to an increasing cover of big sagebrush and presumably a decrease in *A. sinuatus*. The resulting increase in fuels will lead eventually to a hotter fire than the species historically encountered. Add to this the presence of weedy annual species and today a fire may have significant negative impacts. Alternatives to reduce the cover of big sagebrush should be considered. Herbicide application for weed control may also pose a threat.

References:

Hitchcock, C.L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1961. *Vascular Plants of the Pacific Northwest, Part 3: Saxifragaceae to Ericaceae*. University of Washington Press, Seattle. 614 pp.

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